Menlo Park Notebook #102 [N-80-06-28]

This notebook covers the period June-September 1880. The entries are by Charles Batchelor and relate primarily to the electric lamp. Included are notes and drawings of a clamp-making machine; notes and drawings of cutters, shapers, and testers for bamboo fiber; notes and drawings of instruments for attaching carbons and for bending and tapping wires for clamps; and notes and calculations about a new mercury pump designed on the screw principle. There are also notes on the lifting power of palmetto fans, relating to electric balloon experiments; notes on a pump, apparently for water; and notes and drawings of an electric rock drill. The label on the front cover is marked "Batchelor" and "June 28 80." The book contains 284 numbered pages.

Blank pages not filmed: 100-221, 224-279.

Missing page numbers: 87-90.

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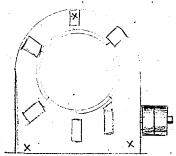
May 1, 1896

Notes on New Clamp making Machine June 28th 1880

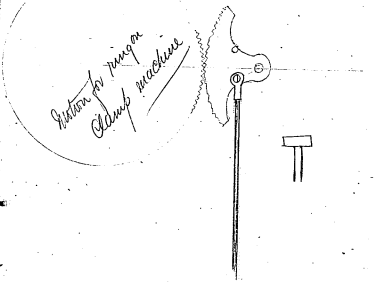
1= After portion of Cam shaft so ~~that~~ the feeding device shall be driven direct by bevel gears.

2 Make shape of tip part 20:-

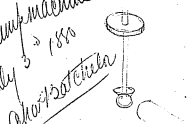
Standing on 3 legs at XXX

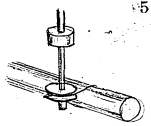


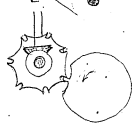
2 = 2 in cones 12 in. long. = 10·616
1. Locker 2½ X 2½ = 12 in 10·616
Heads 8 X 3 X 3 15·2
25·00
Rs. 56



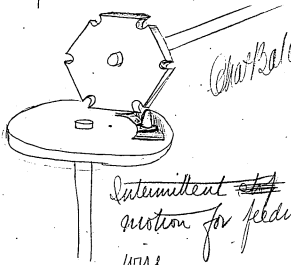
Lamp-machine
July 3 1880
Christofle







Clamp machines July 3rd 1880 7

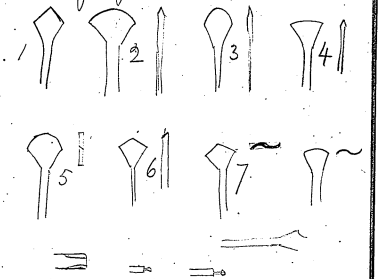


Chas Batchelor

Intermittent ~~stop~~ motion for feeding wire

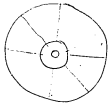
6 4
2 4 6
2 4 8
2400

Centres 4" apart a
1 – 4
Large 1
Small 4
What is B of large and small
Drills for platina



3.14
10

31.40



2.7"

2-10¾" — 28½"

2-7" 1.10

14½"

2'8½"

1'11½"

14½"

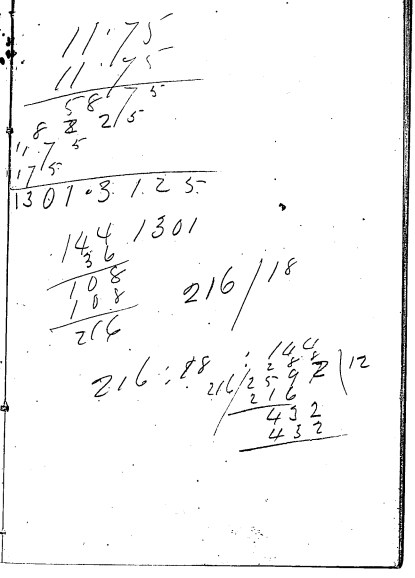
4 Vanes as much

2 · 9½ 9
1 · 13 111½

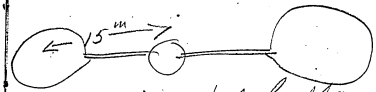
2 · 8½ 8½
1 · 10 6

1 6½ 79½

2 · 8½
1
1 · 3½



200 revolutions



2 ordinary palmleaf fans
gave lifting power of
12 ounces to square foot

Yellow Jacket

		H.P.	lifts	
1 Comp.	30" X 12 feet	500	200	per Stroke
cond.	60" X 12 "			

Double line of 16 pumps lift about
250 feet 10 ft stroke capacity
of stroke 80 gallons — 6 strokes
or 480 gallons per minute
for each line of pumps

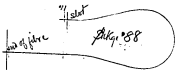
Then what we want is
to raise 960 gallons per minute
What height?

960 gallons 3360.00
8 lbs
7680 1920.
2560 40
3 5 4 0 0 58 H.P.
1 5 3 6 0
1.9 2 0.0 0 0 32000 lbs 46 60
2 1 . 6 0 0
460

Bamboo fibre. July 15th 1880

~~E.G.A.H.P.~~

start & end Length 4'440 – per cent Shkge 29



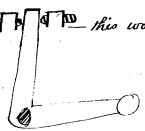
4·440 – to make mould to –
444
888

Clamp Machine July 20 1850

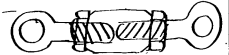
Improvement on model —

1 ~~Shaft~~ Bearings made with caps so as to take shaft out

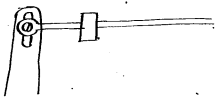
2 Lever for shears to be adjusted so: — this works the shears



3 Link for punch to be adjusted: —



4 Connection between Cam lever and 'ring rod' to be positive so:-

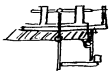


5 Shears must be made to stand up an eighth and their points bent down so:-

6 Top of button must be larger but position same and top excentric so as to give more length to the clamp holder.

7 Clamp holder must be stronger with more bearing and act as a drill jig

8 In first drilling machine an extra slide must come up and hold jig against the round surface whilst the drill enters



9 Monitor ring must be an eighth thicker and the inside edge so: & keep oil and dust from joint

10 Instead of button spring like this make one so:- also put a pin & lift spring out and let go when button has begun to turn.

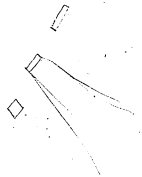
11 Make all the cams with outside and inside flange

12 Make clutch at least 3½ diameter so a heavy spring back

Distance from center pin 5

Shaft 4 21/32

No N N



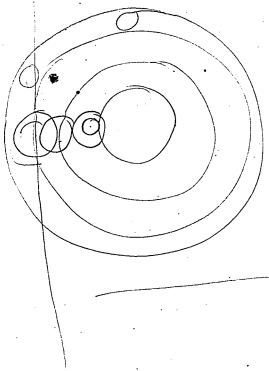
~~Key 10 Inserts 4~~

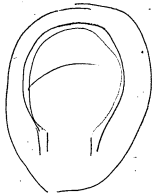
13. Make lock pin left out with a fork ——

14 Distance from centre of work to centre Cam Shaft 6 5/16

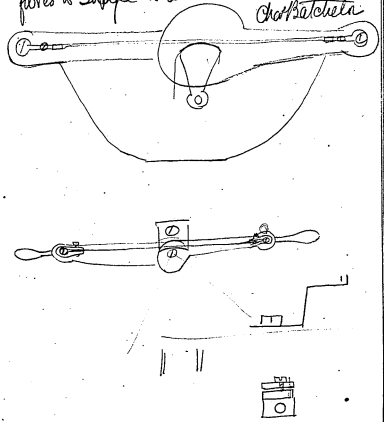
3 - 6
1 - 5
— 11
— 13
6 - 3/16

3 - 6
1 - 5
11
3 - 6





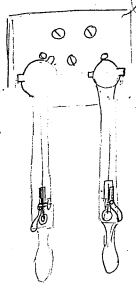
Instrument for bending July 21 1883
gloves to shape to test them
Chas Batcheler

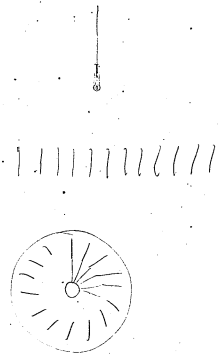


Fabre tester

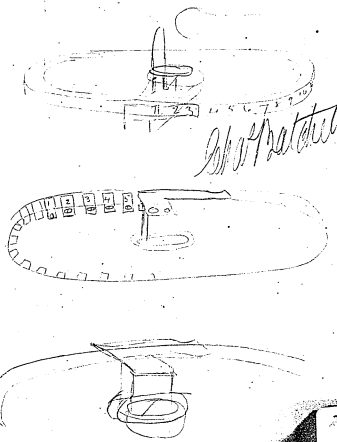
July 25
1910

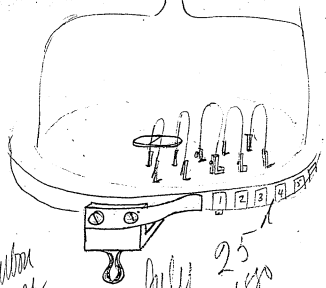
Chas Bartelds





Boston Spinner July 25 1870





Carbon
pioneer

Poisy 25
1880

Albertville

25.000 per mile
30
750.000

30.000
3.0
90.000

10 miles

60 H.P.
3
4 lb. coal 240 4
960
480
5760

8
2 tons 4.5 9
3 tons dust coal 4
2 men 3
2 boys 50
Oil - Waste #10.50

120 / 100ft
1200.000
2 52
300000
15000
2000
100

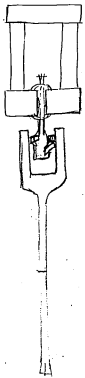
100

1200 1000
1200 gr. in 1 ton
1000
24 | 26000000
30.000.000
20 15000
1 | 25000
21.000

365 | 20000 | 55
1825
1750

Characteristics of a rock drill
Appleton 675

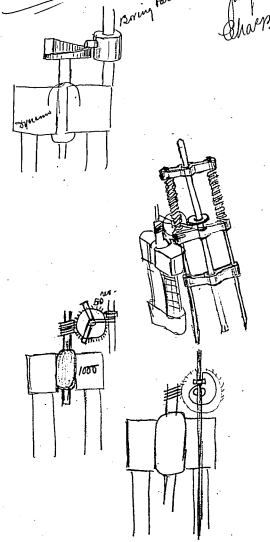
— Variable length of stroke —
— Must have rotary motion —
— external gear if possible to be avoided
— If stroke is too short it will clog instead of churning up the debris
— Hard rock 3½ in stroke
— Soft rock 6 or 7 inches
— Necessity of wide variation of stroke
Appleton 675 p.
— Necessity of striking a light or a heavy blow



Electric Rock Drill

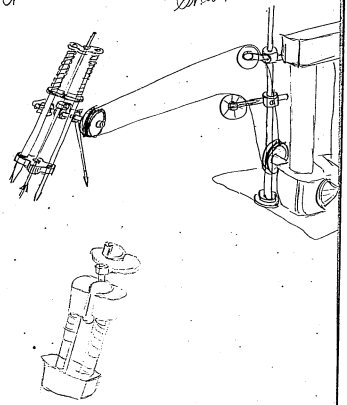
Invented by Chas. Sabatier

July 25th 1871



Electric Rock drill

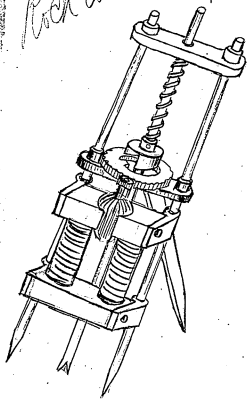
July 25 1880
Chas Batchelder



Electric Rock Drill

July 25th 1871

Chas. P. Batcheller



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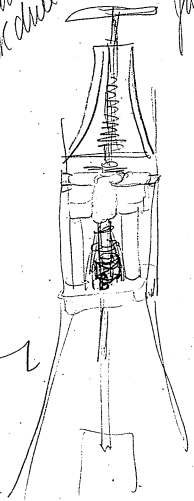
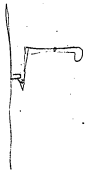
Electric Rock drill

July 25 1885





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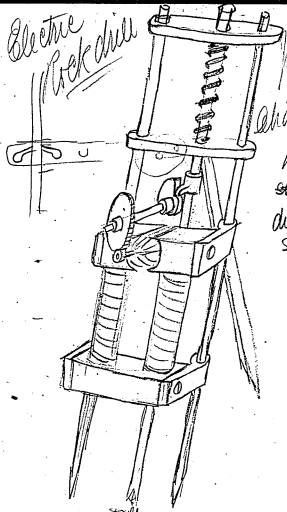
Electric Rock drill

July 25 1885

Chair seat rotates or how about ~~shaft~~ cam direct on shaft

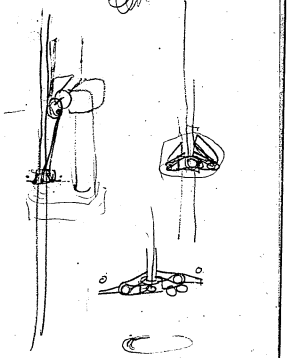


Electric Rock drill

Explanation

July 25 1880

Clark Battelle



Lamps Aug 3 1880 63

Have John Ott make some
Nickel Lamps

Use Iron screws with all our
experimental lamps at present

Rock drill

Engineering Vol 14 Page 56—

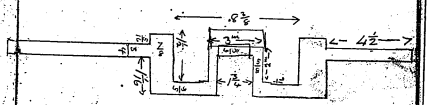
McKean rock drill

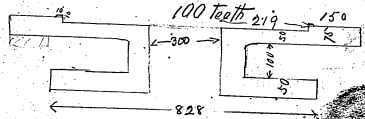
adapted for 500 & 1000 strokes per minute— stroke of piston and fall of cutter 2½ & 3"—

Clamp machine bed

Aug 4 1880 87

Chap Ratchets





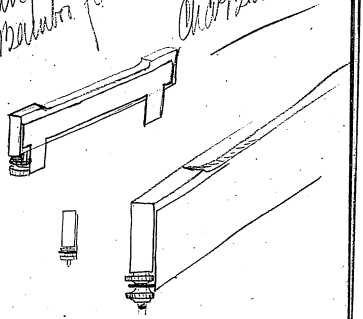
8.26

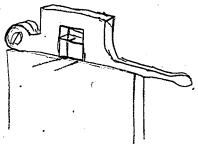
4 3

First line 8·18 diam
Whole diameter 8·28

1·50
2·19
3·00
2·19
1·50
10·38

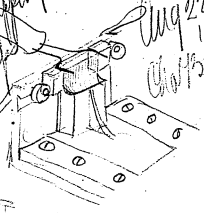
Ceiling mould for Balustr. fibres Aug 21 Chippendale

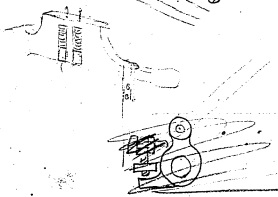


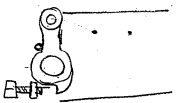


Instrument for tapping a hernia in the groin

Aug 22nd 1870





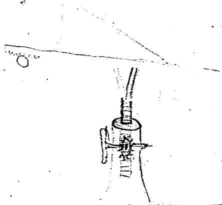


$$\frac{2}{P} = \frac{2}{22} = 22 \,\big|\, \begin{array}{l} 200 \\ 198 \end{array} \,\big|\, 0.09$$

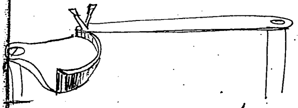
$$.09 + t =$$

$$D' = 8.18$$

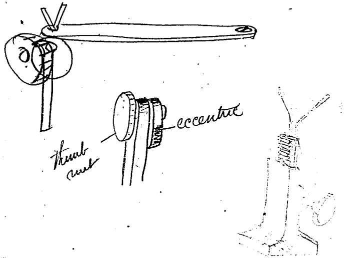
$$D = \frac{N+2}{P} = \frac{180+2}{22} = \frac{182}{22} \,\big|\, \begin{array}{l} 182 \\ 176 \\ 1.60 \\ 44 \\ 160 \end{array} \,\big|\, 8.28$$

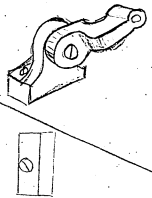


[illegible]



Adjustable support for inside parts





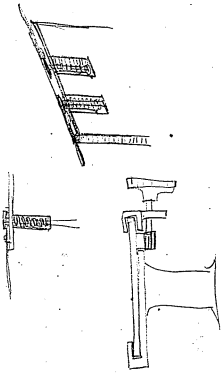
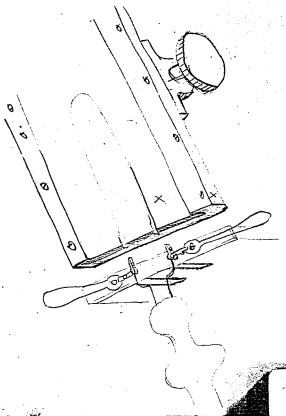
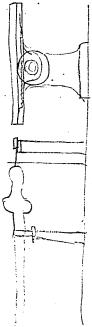


Chart for putting on Cantrow

Aug 22nd 1885
Chas Walstrom





Make

~~3.1 2.14~~

·017 × ·0031 × 2·42 makes a lamp.

of

17 × 8 × 3 ~~=~~ ·0576 = 100 R

R.S. 50 - 136

17 × 2 × ·038

R.S. ·038

17 × ~~0~~ × 37.

R.S - 40

·017 × ·001

R.S. 36

17 × 3 · ~~3.67~~ 3.5

40 - 51

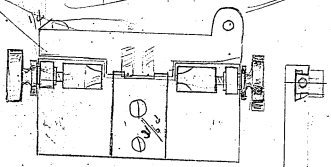
16·6 . 8·5

~~3·3~~ 4·25

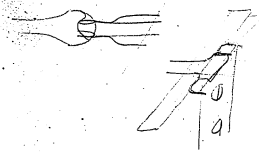
~~49·9~~ 63·75

~~xxxx~~

Machine for bending pipes and putting on the clamps



Base 12 X 4 X ½



New Mercury pumps on Screw principle

$1\frac{1}{2}$ 14 in

$14 \div 11$

11 / 25 × $14 \div$ =

196

150

225

2.4674 / 4 90.0.0.0 / 21 9 3 4 8

1.5 / 1.5 / 9 / 15 / 2.25

$1\frac{1}{2}$

11 / 12.25 × $1\frac{1}{2}$

2.25

6.25

50

150

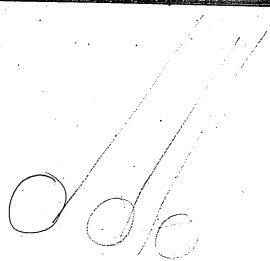
1 5.1.2 5

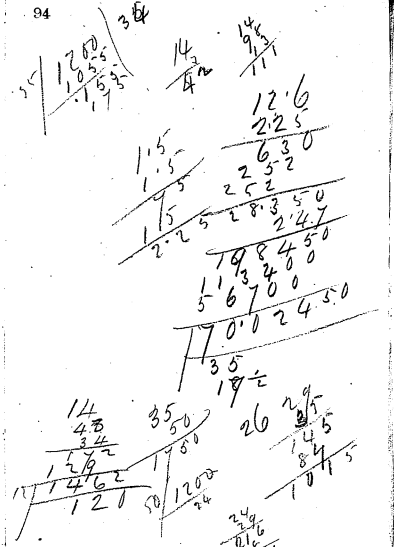
1 / 2.46

2000 / 0 2 7 2 / 7 8 4 8 / 1 4 2 4

4 3.1 1 5

$21\frac{1}{2}$





Pumps.

½ inside diameter

Centre to centre 12·6

Inside diameter 12·1

$1·5 + 11·1 \times 1·5^2 \times 2·47 =$

cubic inches =

$12·6 \times 2·25 \times 2·47 = 70$

cubic inches

$70 \div 2 = 35$ cubic inches

in one half or 17½ lbs

every turn 35 lbs

34 Rev. gives us 1200 per min.

Always 1015 lbs in Barrel

Double thread round 12" pipe

100.0
4000

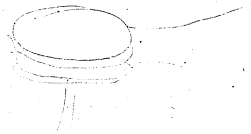
Spiral pump
3 threads round 12" pipe

Weight
47/170 less 1/27

160
13÷4
480
1600
40
2120

If we make a casting and cut threads into it and put on shell —

We could cast the piece and it would weigh about 556 lbs.



8 X 17 X 6.000 = Solid Content
Packages 8,
1P

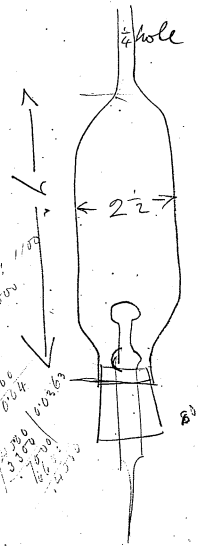
12 X 12 X 4 = .5760 .4610

12 X 12 X 6 = .864

3 X .030 X .610 = .0900 .0200

.4610

.72


¼ hole
2½